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PRELIMINARY 50254

Health Assessment for

ORIGINAL (Red)

COMMODORE SEMICONDUCTOR SITE

NORRISTOWN, PENNSYLVANIA

SEPTEMBER 29, 1988

PRELIMINARY HEALTH ASSESSMENT
COMMODORE SEMICONDUCTOR SITE
NORRISTOWN, PENNSYLVANIA
September 29, 1988

Prepared by:
Office of Health Assessment
Agency for Toxic Substances and Disease Registry (ATSDR)

Background

The Commodore Semiconductor Site is listed by the U.S. Environmental Protection Agency (EPA) on the National Priorities List (NPL). The 80.6-acre site, located in a residential and light-industrial area in Norristown, Pennsylvania, is an active computer chip manufacturing facility with a history of leaking underground solvent storage tanks. The EPA has not yet conducted a complete Remedial Investigation and Feasibility Study (RI/FS) for this site.

Environmental Contamination and Physical Hazards

On-site groundwater is contaminated with high levels of trichloroethylene (TCE, 74 ppm) and other volatile organic compounds (VOC's) including trans-dichloroethylene, benzene, chloroform, methylene chloride, carbon tetrachloride, and tetrachloroethylene. On-site soils have been sampled on at least one occasion in 1979, and TCE was found at a concentration of 8,840 ppm. An air stripper has been in operation since 1984, but no ambient air data were supplied.

No additional environmental data, or evidence of physical hazards present on-site, were available.

Potential Environmental and Human Exposure Pathways

Environmental pathways associated with this site are on-site soils, groundwater, and possibly ambient air. The extent of off-site groundwater contamination is not known at this time, although TCE may contaminate much of the regional groundwater. One private residential well was reported with 635 ppb TCE and there have also been reports of contamination in off-site commercial supply wells. Reports indicate that off-site soil contamination may have occurred, although no data were available to support these reports. Off-site surface waters have not been sampled at this time.

The major relevant human exposure pathways are associated with contaminated groundwater from this site; they include ingestion, inhalation, and dermal contact. Additional pathways of concern include inhalation of ambient air contaminated with TCE and other VOC's that have been emitted from the air stripping unit, and direct dermal contact, or ingestion, of contaminated on-site and off-site soils.

COMMODORE SEMICONDUCTOR SITE, NORRIDTOWN, PENNSYLVANIA

Demographics

There are approximately 15,845 people living within a 3-mile radius of the site.

Evaluation and Discussion

At present, the greatest potential for human exposure is through the use of contaminated groundwater. An assessment of area groundwater use by means of a comprehensive well survey, followed by sampling of nearby residential wells, is necessary to fully assess the public health implications of this site.

A variety of VOC's may be present in any one well, and their combined effects may be greater than additive. All residential well data should be analyzed individually and the total extent of contamination given consideration.

Air contamination from stripping VOC's from contaminated soil and groundwater may adversely affect the health of the nearby population. No available data allow for evaluating this concern.

The ATSDR will be preparing Toxicological Profiles on all substances that have been reported present at this site.

Conclusions and Recommendations

Based on the available information, this site is considered to be of potential public health concern because of the risk to human health caused by the possibility of exposure to hazardous substances if this aquifer were to be used as a primary water supply by nearby residents. A thorough residential well survey and current private and monitoring well data are necessary prior to ATSDR completing a Health Assessment of this site.

At present, the residential well found to contain TCE at 635 ppb represents an imminent public health concern and should not be used for human consumption without carbon filtration or other suitable remedial measure. If this well is used with filtration, it should be monitored regularly to ensure that failure of the filter does not endanger the users' health.

Air emitted from the air stripper should be sampled to ensure that it meets health-based standards. On-site soils should be better characterized and access limited for those areas found to be highly contaminated at this active facility.

Further environmental characterization and sampling of the site and impacted off-site areas during the RI/FS should be designed to address the environmental and human exposure pathways discussed above. When additional information and data become available, e.g., the completed RI/FS, such material will form the basis for further assessment by ATSDR at a later date.